EDITORIAL

Dear readers,

In front of you is a double-issue 3-4/2009 of the journal Automatika celebrating the 50 years of its continuous publication. It is indeed a great and significant anniversary qualifying our journal among the oldest world journals in the area of automation and related areas. A large number of our predecessors were actively participating in the formation of the journal and at this occasion we are expressing our gratitude and respect on behalf of all generations of our readers. The information on our most eminent predecessors may be found under The address of the president of KoREMA, Prof. Nedjeljko Perić, PhD.

Under this jubilee double-issue we have tried to cover a large spectrum of themes interesting to the readers of the journal. Although all twelve papers were received by the editorial board upon a direct invitation to their authors, all the papers were reviewed. The contributions have been classified under the three thematic groups.

To the first thematic group four papers belong, referring to the theory and application of control system. In the paper: ***Polytopic Computations in Constrained Optimal Control*** *M. Baotić analyses basic polytopic manipulations in the context of the computational effort. An in-place depth-first exploration algorithm was developed that solves the regiondiff problem in an efficient manner. A strict upper bound for the computational complexity of the described algorithm was derived. In the paper:* ***Wind Turbine Control for Highly Turbulent Winds*** *M. Jelavić and N. Perić describe a novel approach to the wind turbine control intended for a wind turbine operation during strong and gusty winds. The approach relies on a combined use of generator electromagnetic torque and pitch control. In the paper:* ***Influence of saturation on on-line estimation of synchronous generator parameters*** *M. Despalatović et al. discus on-line estimation of rotor body parameters of the synchronous hydro-generator under saturated condition. A new model of the saturated synchronous salient-pole machine was developed, based on the saturated synchronous inductances which are estimated from measured steady-state operating data. In the paper:* ***Identification of Unmanned Underwater Vehicles by Self-Oscillation Method*** *N. Mišković et al. describe a self-oscillation based method for determining inertia and drag parameters for unmanned underwater vehicles. The procedure is easily implementable in field conditions and gives satisfactory results. Both linear and nonlinear models of yaw, heave and surge degree of freedom can be identified.*

In the second thematic group are four papers featuring the themes of robotic and autonomous systems. In the paper: ***Towards Safe Vehicle Navigation in Dynamic Urban Scenarios*** *K. Maček et al. describe the deliberative part of a navigation architecture designed for safe vehicle navigation in dynamic urban environments. Different safety levels are explored and their operational conditions are explicitly spelled out. In the paper:* ***RANSAC-Based Stereo Image Registration with Geometrically Constrained Hypothesis Generation****, R. Cupec et al. propose an approach for registration of sparse feature sets detected in two stereo image pairs taken from two different views, especially suitable for cases where there is a high percentage of false initial matches. In the paper:* ***Sensing in Intelligent Spaces: Joint Use of Distributed and Onboard Sensors****, D. Brščić et al. analyze the distributed sensing using the extended information filter and computation issues that arise due to correlations between estimates. In the paper:* ***Design and Implementation of Remote Control System for Reactor Vessel Weld Inspection Manipulator****, I. Daraganjac*

et al. describe a design and implementation of a remote control system of a manipulator for weld inspection of nuclear reactor vessels.

In the third group are papers classified in the area of metrology, communications and computing. In the paper: ***Model-based stochastic inversion of coil impedance for determination of tube inner radius and electromagnetic properties****, D. Vasić and V. Bilas present a stochastic formulation of the inverse problem of determination of the inner radius and electromagnetic properties of metal tubes from the measured coil impedance, based on the Monte Carlo Markov chain method and the analytical impedance model. In the paper:* ***Specialty Optical Fibers: Analysis and Characterization****, Z. Šipuš et al. describe the application of specialized numerical analysis approaches in the analysis of multilayer optical fibers with circular symmetry, and of novel types of fibers belonging to the so-called Photonic Crystal Fibers family. In the paper:* ***Particle Filters in Decision Making Problems under Uncertainty****, Z. Kostanjčar et al. present a decision making process that incorporates particle filters and a genetic algorithm, used as an optimization method for determining the asset allocation. In the paper:* ***Widget-Oriented Consumer Programming, S. Srbljić et al. present a consumer-oriented framework for programming application-level workflows over widgets****, in order to automate frequent consumers' manual operations over a set of widgets.*

Dear readers, along with this double-issue of the journal Automatika, 18-years have passed of my activity as its editor-in-chief. I assumed this position under war and hardship, when it was not easy to ensure the publication of the journal. Owing to numerous authors and consulting editors and to the members of editorial board, and particularly to the society KoREMA that provided for financial and technical support, we succeeded in keeping up the journal.

Starting with the next issue I confidently surrender the function of the editor-in-chief to Prof. Ivan Petrović, PhD, who in the course of two previous years as my deputy proved to be up to this task. Under his guidance I wish for the journal Automatika further successful development and progress in the light of new scientific and technological achievements. Than you all!

Editor-in-chief
Prof. Borivoje RAJKOVIĆ, PhD